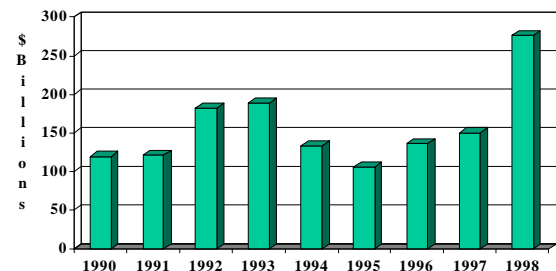


# **THE MASSIVE MORTGAGE COHORT OF 1998**

*Research & Analysis*  
*Office of Thrift Supervision*  
*Washington, DC*

**INTRODUCTION.**

**M**ix a robust economy with low interest rates, then lower mortgage rates even more, add an extremely competitive business environment with innovative mortgage products, and you have a recipe for the greatest year in mortgage origination history. Figure 1 shows the level of home mortgage originations by OTS thrifts during the nineties. By any measure, 1998 has turned out to be a banner year.<sup>1</sup> OTS-regulated thrifts and their subsidiaries and affiliates originated \$276 billion in home mortgages in 1998, more than they originated in 1993, the previous best year in their history. According to the Mortgage Bankers Association of America, there was \$1.46 trillion worth of home mortgage originations in 1998, exceeding by 46% the previous \$1 trillion record set in 1993.

**Figure 1: OTS Originations (Source: TFR)**

The 1998 Home Mortgage Disclosure Act (HMDA) data provide more evidence of the intensity of mortgage activity at thrift institutions. In 1998, OTS institutions supplying HMDA data reported 3.7 million loan applications. As recently as 1996, the number of applications was less than 2 million. At the same time as applications were rising, the number of OTS reporters was falling. In 1996, OTS had 1,124 HMDA reporters, with an average of 1,777 loan applications per institution. In 1998, the number of OTS HMDA reporters had declined to 810 institutions, but the average number of applications per institution had climbed to 4,547, more than 2.5 times that in 1996.

The massive mortgage cohort of 1998 is likely to affect mortgage default rates and losses for years to come. As default rates tend to be quite low in the first two or three years of a mortgage's life, this infusion of recently underwritten loans augurs well for overall default rates in the next couple of years, especially because of the high proportion of refinancing mortgages in the 1998 cohort. Data from the Mortgage Information Corporation show that as of the end of the 1998, more than 58% of the home mortgages originated in 1998 and currently held in portfolio were refinancings.

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<sup>1</sup> Prior to June 1996, OTS reported thrift origination data on an unconsolidated basis. Now OTS reports the data on a consolidated basis so that the data reflect not only the thrift's own activity but that of any mortgage subsidiary that it might own. Thus the data from the early nineties are not directly comparable to current levels.

Refinanced mortgages often have lower expected default rates than original home purchase mortgages. Refinancing offers the institution an opportunity to review an applicant's credit standing and history of payments on an existing mortgage. Refinancing also offers a borrower an opportunity to increase the amount borrowed, a so-called cash-out refinancing. According to Freddie Mac, 51% of all 1998 refinancings involved increasing the loan amount by 5% or more. This contrasts with the 34% of the 1993 refinancings that were cash-out. This increase in cash-out refinancings may offset some of the performance improvement normally associated with refinancing.

In both refi boom years, mortgage interest rates declined, permitting borrowers to keep the monthly cost of their mortgage debt constant, even while increasing the size of their loans. This suggests that the greater the decline in mortgage rates, the larger the number of cash-out refinancings. However, the decline in rates was even greater in 1993 than in 1998. According to Freddie Mac, those who refinanced in 1993 lowered their mortgage rates by 1.8 percentage points; in 1998, those who refinanced lowered their rates by only about 1.2 percentage points. Yet cash-outs, according to Freddie Mac, were a substantially smaller percentage of the 1993 refinancings.

What made 1998 so different? Are the 1998 refinanced mortgages riskier than the 1993 cohort that has performed so well? Have cash-out refinancings raised the average LTV ratio significantly? In the home purchase market, high loan-to-value (LTV) mortgages, especially government-backed mortgages, have become increasingly popular. But taking cash out in a refinancing may not result in a higher LTV ratio than the original LTV ratio because of appreciation in home prices.

Other factors can also affect the risk of a refinanced mortgage. If the borrower uses the cash from a cash-out refinancing to retire other more expensive debt, then the borrower's total debt load would decline, making the refinanced loan less risky. Likewise, other investment opportunities, like the booming stock market, may be a more attractive investment than leaving equity in the home. If these alternative investments appreciate, mortgage default becomes less likely. If the borrower uses the cash-out to finance current spending, however, the loan is riskier than before. Unfortunately, we have little direct information on how the cash is used in a cash-out refinancing. However, we do have information on the LTV ratio and product mix of the 1998 cohort and we will explore these aspects in more detail to get a better sense of the impact of the massive mortgage cohort of 1998. But first, let's look at current market conditions.

## CURRENT MORTGAGE MARKET CONDITIONS

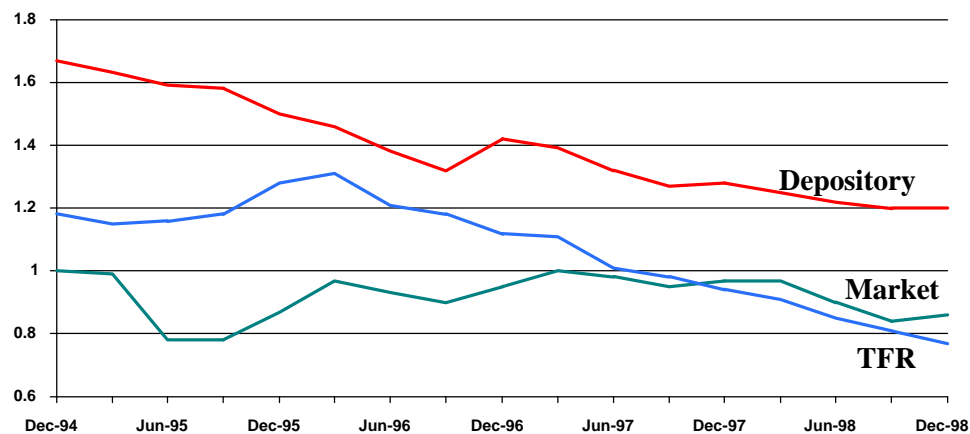
### National Delinquency Rates Remain Low

**F**igure 2 plots the percentage of seriously delinquent (90 days past-due or in foreclosure) residential mortgages, using both the Mortgage Information Corporation (MIC) and Thrift Financial Report (TFR) data. The MIC data

comprise almost 24 million mortgages. Since the first issue of the *Mortgage Market Trends*, we have divided the MIC data into two groups: the market, which includes all MIC participants (Freddie Mac, Fannie Mae, and eighteen other large banks, thrifts, and private mortgage lenders), and a subgroup, depository institutions, which includes only the FDIC-insured MIC participants (a mix of S&Ls and commercial banks). As the trend line in Figure 2 shows, the national delinquency rate rose slightly at the end of 1998. The MIC depository delinquency rate was flat. However, OTS-regulated (TFR) thrift delinquency rates continued to decline, a trend that started in March 1996.

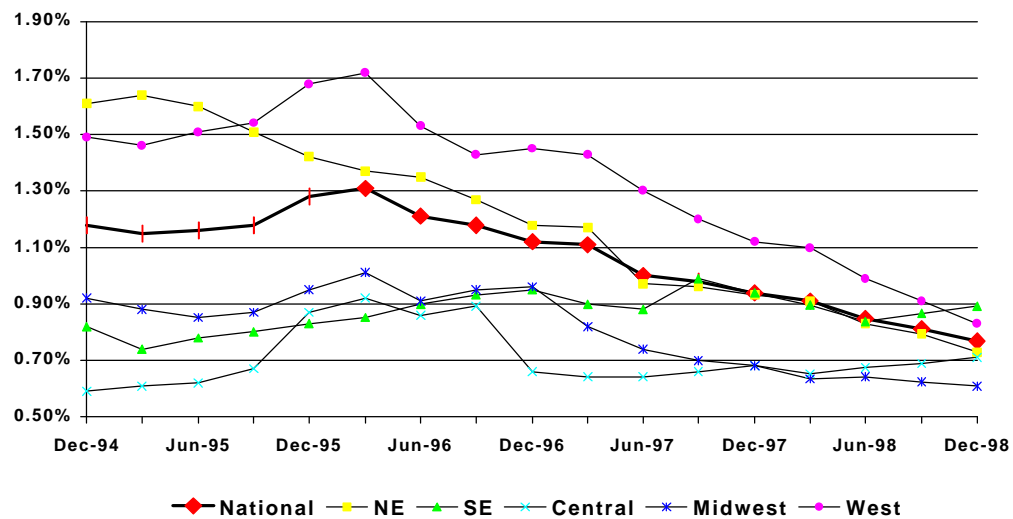
Figure 2 also shows that depositories, as a group, have had a higher delinquency rate than the national average for the entire period. The gap between the depository and the market delinquency rates has remained fairly constant since June 1997. The thrift industry, though, has improved its performance so much over the last few quarters that its delinquency rate has dropped **below** the MIC national rate (which is dominated by the GSEs' portfolio of conforming mortgages) for the last four consecutive quarters.

**Figure 2: Percentage of Seriously Delinquent Mortgages**



Source: MIC and TFR. The *Market* contains the combined data of the depository and non-depository participants in MIC's Loan Performance System. *Depositories* comprise both bank and thrift MIC participants. The thrift MIC participants are very large institutions located primarily on the East and West coasts. *TFR* represents all OTS-regulated institutions except one that specializes in defaulted mortgages.

Figure 3 shows the regional detail behind the improvement of the overall thrift delinquency rate. The Northeast and West region continued to improve, while the Midwest maintained its distinction of having the lowest rate of seriously delinquent mortgages among all five regions. For the first time since we have been tracking regional performance, the West region no longer leads the nation in poor performance. The Southeast has taken over as the worst performing region. The Central Region's performance has also been deteriorating over the last three quarters, but it still has relatively few delinquencies.

**Figure 3: OTS Regional Delinquency Rates**

### Hawaii, Maryland, and DC have highest delinquency rates

In December 1998, according to the MIC data, the states with the highest rates of seriously delinquent loans (by dollar value) were Hawaii (1.82%), Maryland (1.76%), District of Columbia (1.59%), New York (1.46%) and New Jersey (1.46%). The national average was 0.86%. California, which has previously drawn national attention because of its poor performance, had a rate of 0.91%, close to the national average. Iowa (0.25%) and Nebraska (0.22%) had the lowest rates.

In individual markets, Riverside, CA, with a seriously delinquent rate of 2.33%, again led the nation. It was followed by Scranton, PA (2.13%), and Memphis, TN (2.09%). Among major markets, Miami was fourth with a rate of 1.81% and New York was tenth with a rate of 1.52%. San Francisco, with a rate of 0.21%, had the lowest seriously delinquent rate in the nation.

Table 1 shows the percentage of mortgages that are seriously delinquent for different product types (conventional and government-backed, fixed rate and adjustable) based on whether the mortgages were made for purchase or for refinancing. These data show that fixed rate mortgages outperform adjustable rate mortgages; fifteen-year fixed rate mortgages outperform thirty-year mortgages. Refinanced mortgages perform much better than home purchase mortgages in all cases except one, COFI ARMs, where the refinanced mortgages have a slightly higher delinquency rate than COFI ARM home purchase

**Table 1: Percent Seriously Delinquent, as of 12/98**

	Home Purchase	Refinancing
<b>Conv: Fixed Rate</b>	0.56	0.23
15-Yr Fixed	0.18	0.09
30-Yr Fixed	0.61	0.30
<b>Conv: Adj Rate</b>	1.04	0.81
T-Bill	0.95	0.73
COFI	1.17	1.22
<b>Government</b>	3.47	1.61
FHA	3.69	1.43
VA	3.01	1.84
<b>All Loans</b>	1.07	0.37

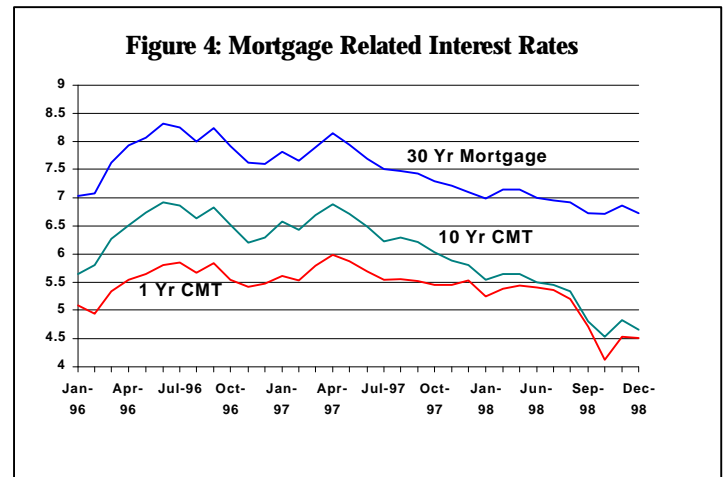
Source: MIC, based on \$ amounts

loans. Delinquency rates on government-backed loans substantially exceed those on conventional loans. For home purchase mortgages, government-backed loans have a seriously delinquent rate five times higher than that for thirty-year conventional loans (3.47 vs. 0.61); for refinancing loans, the rate is also five times higher (1.61 vs. 0.30).

### Interest Rate Changes

The demand for mortgages that has driven the record setting origination activity has come primarily from two sources – falling interest rates and new home purchases. Figure 4 depicts the movement of key interest rates since January 1996.

The 1 year constant maturity Treasury rate (1 Yr CMT) is frequently used as an index for adjustable rate mortgages. The 10 year constant maturity Treasury rate (10 Yr CMT) serves as an overall risk-free reference rate for longer-term contracts. The FHLMC 30 day commitment rate for thirty-year fixed rate conforming mortgages provides a commonly used mortgage rate benchmark. During the period July through October domestic and worldwide events prompted a flight to safety that drove down Treasury rates sharply. Mortgage rates also fell but not as nearly as much. Thus the spread between Treasury rates and mortgage rates widened in the third quarter, even as mortgage rates declined. The rates rose in November, but again declined slightly in December. This rapid decline in interest rates prompted many to refinance into fixed rate mortgages, especially in the second half of the year.



### Originations by Product and LTV

The Federal Housing Finance Board conducts its *Mortgage Interest Rate Survey (MIRS)* monthly among mortgage lenders on the interest rates and terms of their recently closed conventional (non-government-backed) mortgages. Table 2 reports the survey results for the months ending each quarter over the last eighteen months.

Table 2 shows that, for all three lender groups, effective mortgage interest rates (which include the amortization of initial fees and charges over a ten-year period) have declined sharply since the end of June 1997. For S&Ls, the current average is 6.61%, for commercial banks, 6.96%, and for mortgage companies, 7.00%. The average effective interest rate was substantially lower for S&Ls than that for the commercial banks and mortgage companies in every quarter surveyed.

The narrow difference between the 1-year and 10-year interest rates over the last year continues to affect ARM originations. S&Ls have traditionally originated a higher proportion of ARMs than either commercial banks or mortgage banks, and this pattern persists. While more than half of S&L's originations are typically ARMs, the ARM percentage had fallen to just 31% in December. At commercial banks and mortgage companies, the decline in ARM originations has been even more dramatic. Only 8% of the commercial banks' and 4% of the mortgage companies' originations were ARMs during the fourth quarter of 1998.

The distribution of originations by loan-to-value ratios can also create differences in the effective interest rates between S&Ls and commercial banks and mortgage companies. Over the last year and a half, S&Ls have originated a much smaller percentage of their loans in the highest LTV category (greater than 90% LTV ratio) than the other two originators. This difference between commercial banks and S&Ls should eventually be reflected in the respective charge-off rates, as high LTV loans are generally riskier than low LTV loans. Because of their higher credit risk, higher LTV-ratio loans (without mortgage insurance) should carry higher rates and/or more fees and charges than lower LTV-ratio loans.

**Table 2: Mortgage Rates and Terms**  
(Conventional Home Purchase Mortgages)

	Effective Rate	Percent of Loans by LTV Class				% Arms
		< 70%	70-80	80-90	>90	
<b>S&amp;Ls</b>						
Jun-97	7.33	22	45	16	17	56
Sep-97	7.12	21	49	15	15	53
Dec-97	7.05	25	48	13	14	45
Mar-98	6.96	24	46	14	16	36
Jun-98	6.90	25	47	13	15	39
Sep-98	6.72	26	47	12	15	35
Dec-98	6.61	30	43	12	14	31
<b>Commercial Banks</b>						
Jun-97	7.86	21	38	18	22	21
Sep-97	7.59	22	37	17	24	16
Dec-97	7.46	18	32	16	35	9
Mar-98	7.22	15	34	16	36	9
Jun-98	7.21	15	31	14	40	9
Sep-98	7.01	17	34	17	33	7
Dec-98	6.96	15	38	16	30	8
<b>Mortgage Companies</b>						
Jun-97	8.03	18	36	17	28	16
Sep-97	7.77	19	36	18	27	13
Dec-97	7.51	19	36	17	27	8
Mar-98	7.28	20	37	17	27	6
Jun-98	7.29	19	37	16	28	7
Sep-98	7.11	19	36	16	28	4
Dec-98	7.00	20	38	16	26	4
Source: Mortgage Interest Rate Survey, Federal Housing Finance Board						

Source: Mortgage Interest Rate Survey, Federal Housing Finance Board

## THE 1998 MORTGAGE COHORT

Six million of the 24 million loans now held in portfolio by the Mortgage Information Corporation's participants were originated in 1998 alone. This cohort, 25% of the total, though smaller in percentage terms than the 1993 cohort at the end of 1993 (30%), now represents the largest single cohort in the MIC database.

How well will this massive cohort perform? Factors that can affect its performance include the product mix and the loan-to-value ratios of the loans in the cohort. Previous research has shown that the LTV ratio is the single most important factor in explaining mortgage delinquency performance. In addition, different types of loans also present different risk profiles. Fifteen-year fixed rate mortgages have the lowest default rates, followed by thirty-year fixed rate loans.

Adjustable rate mortgages tend to have higher default rates than fixed rate mortgages. And refinanced mortgages tend to have lower default rates than home purchase mortgages across the all product types.

The MIC data show that 58% of the conventional mortgages originated in 1998 were refinancing mortgages. Of those, 32% were cash-out mortgages, 52% were no-cash taken, and the balance (16%) did not report this item.<sup>2</sup> In contrast, refinancings were an even larger share of the 1993 conventional home mortgage originations, representing almost 70% of the total. The smaller percentage of refinanced mortgages alone suggests that the 1998 cohort will not perform as well as the 1993 group.

### LTV Differences

Several factors help explain the better performance of refinanced mortgages. Refinanced mortgages have, on average, lower LTV ratios than home purchase mortgages. Table 3 presents the 1998 origination cohort held by the depositories in the MIC database at the end of 1998. It shows the portfolio percentages within each loan purpose group by LTV ratio.

To facilitate comparisons among the loan groups, we calculated a weighted average LTV ratio for each loan type. We calcu-

lated the weighted average by multiplying the mid-point of each LTV ratio category by the percentage of the group in that category.<sup>3</sup> For home purchase loans, the weighted average LTV ratio was 76%; for cash-out refinancings, it was 61%; for no-cash-out refinancings, it was 66%.

As the weighted average ratios show, home purchase mortgages have a much higher average LTV ratio than refinanced mortgages. The average is heavily influenced by the high LTV ratio loans. For example, 21% of the home purchases originated in 1998 and held by the depositories had LTV ratios over 90%. This contrasts with just 0.9% of the 1998 refinanced mortgages with LTV ratios above 90%.

There are also significant LTV ratio differences between the two types of refinanced mortgages. No-cash-out refinancings present an interesting mix, with a high percentage of both very low and relatively high LTV loans. Cash-out refinancings have a more even distribution, but with relatively few in the 75% to

**Table 3: 1998 Cohort by LTV and Purpose**

LTV	Percentage of Each Loan Group by LTV Category			
	Purchase	Cash-Out	No-Cash-Out	Refi - Total
20-60	10.7	29.1	25.1	26.3
61-70	9.5	23.0	18.9	20.4
71-75	9.5	29.0	15.3	21.8
76-80	33.0	13.8	26.2	21.1
81-90	15.9	3.4	11.8	8.3
91-95	17.1	0.2	1.7	0.9
96-105	3.9	0.0	0.1	0.0

Source: MIC

<sup>2</sup> Freddie Mac reported a larger percentage of cash-out originations than did MIC depositories for loans still held in portfolio at year's end. Perhaps a greater proportion of the cash-out originations were sold to Freddie Mac than retained.

<sup>3</sup> These averages could be misleading if the distributions of the mortgages in the different LTV groupings were not uniform.



80% LTV category, and even fewer in the higher LTV ratio groups. Mortgages with LTV ratios near 80% and above appear not to be likely candidates for a cash-out refinancing. This may be due to the requirement of private mortgage insurance or a higher interest rate, should the LTV ratio rise above the 80% level.

Table 4 shows the same data for the 1993 cohort held by depositories at the end of 1993. For home purchase loans, only 5.8% of the 1993 home purchase mortgages had LTV ratios over 90%. This contrasts sharply with this past year's cohort, where 21% fell into this category.

The differences in the weighted averages in each loan category between the 1993 and 1998 cohorts also reflect the trend towards higher LTV ratios

over the last five years. In 1993, the weighted average LTV ratio for home purchase mortgages was 74%; for cash-out refinancings, it was 56%; and for no-cash-out refinancings, it was 60%. All were lower than their 1998 counterparts, which were 76%, 61%, and 66%, respectively.

These differences in the distribution of LTV ratios between cash-out and non-cash-out refinancings suggest that cash-out refinancings are more likely to occur when there has been a large buildup in home equity value. Even after the refinancing, cash-out mortgages still have lower average LTV ratios than non-cash-out mortgages. Given the low LTV ratios of cash-out mortgages, this segment of the market should not pose a performance problem for the 1998 cohort.

**Table 4: 1993 Cohort by LTV and Purpose**

LTV	Percentage of Each Loan Group by LTV Category			
	Purchase	Cash-Out	No-Cash-Out	Refi - Total
20-60	11.6	43.1	35.3	36.3
61-70	11.4	19.9	19.6	19.9
71-75	11.6	17.8	15.7	17.6
76-80	35.7	11.0	19.4	18.0
81-90	26.7	4.7	8.0	6.1
91-95	5.7	0.1	0.1	0.1
96-105	0.1	0.0	0.0	0.0

Source: MIC

### Product Mix Differences

An analysis of the product mix between the two cohorts also suggests another factor than may affect their relative performance. Not all loans are identified by product type. However, for those loans with that information, the MIC depositories showed the following. In 1993, 34% of the refinanced mortgages were fifteen-year fixed-rate mortgages; 36% were thirty-year fixed-rate mortgages; and 20% were adjustable-rate mortgages. In 1998, 28% were fifteen-year fixed-rate; 59% were thirty-year fixed rate, and only 7% were adjustable-rate. Among refinanced loans, a lower percentage of the 1998 cohort was fifteen-year fixed rate mortgages than in the 1993 cohort. Fifteen-year fixed-rate mortgages are the least risky mortgage type. However, the 1993 cohort had a higher percentage of adjustable-rate mortgages, which generally pose more credit risk than fixed-rate mortgages.

Home purchase mortgages also showed the same pattern. In 1998, 85% of the home purchase mortgages were fixed-rate -- 76% thirty-year, and 9% fifteen-year. In 1993, only 60% were fixed-rate -- 48% thirty-year, and 12% fifteen-year. Adjustable-rate mortgages were much more popular in 1993, with 30% identified as

such. In 1998, only 6% were identified as adjustable-rate. While fixed-rate mortgages pose less credit risk than adjustable-rate mortgages, they do present a higher level of interest-rate risk to those institutions that hold them.

## CONCLUSION

**T**he massive mortgage cohort of 1998 is likely to affect mortgage portfolio performance for years to come. Will it turn out to be as great a performer as the 1993 cohort? The answer appears to be no, for several reasons.

First, the 1998 cohort had a lower proportion of refinancings in it than the 1993 cohort. There was a much higher level of home purchase originations in 1998 than in 1993. Refinanced mortgages tend to perform much better than home purchase mortgages for a variety of reasons, the most obvious being their lower average LTV ratios.

Cash-out mortgages had been identified as a major feature of the 1998 cohort. However, the MIC data indicate that cash-out mortgages have lower average LTV ratios than non-cash-out mortgages. Those who take cash out appear to be those whose home equity has increased significantly. House price appreciation data show generally rising prices over the last few years, which was not the case prior to the refi boom of 1993. But the 1998 refinanced loans do have higher average LTV ratios than their 1993 counterparts. The 1998 home purchase loans also have a significantly higher proportion of high (greater than 90%) LTV ratio loans than did their 1993 counterparts. Both reflect the general trend towards higher LTV ratios in home mortgages.

Finally, the 1998 cohort has a greater percentage of fixed-rate mortgages, which, while typically having lower credit risk, present a higher level of interest rate risk for those institutions that hold them. The last five years have been ones of widespread economic prosperity and low interest rates. Both of these factors have contributed much to the outstanding performance of the 1993 mortgage cohort. Whether these conditions will continue to hold is uncertain, but the make-up of the 1998 mortgage cohort suggests that it is more exposed to changes in these conditions than its 1993 counterpart. In short, while the 1998 cohort is likely to perform well, especially in the short run, its long run performance is not likely to emulate the exceptional performance observed so far for the 1993 cohort.

The 1998 cohort is also less likely to affect aggregate mortgage portfolio performance as favorably as the 1993 cohort for one other reason. Despite the record-breaking origination activity in 1998, the 1998 cohort actually represents a lower percentage of overall holdings than did the 1993 cohort. Mortgage activity in the years prior to 1993 had been much lower than the years prior to 1998, and so the 1998 cohort's overall impact will be less than the 1993 cohort.

**Mortgage Market Trends**

**Volume 3 Issue 2**

**June 1999**

**Data Appendix**

**National and Regional Trends in Mortgage Delinquency Rates**

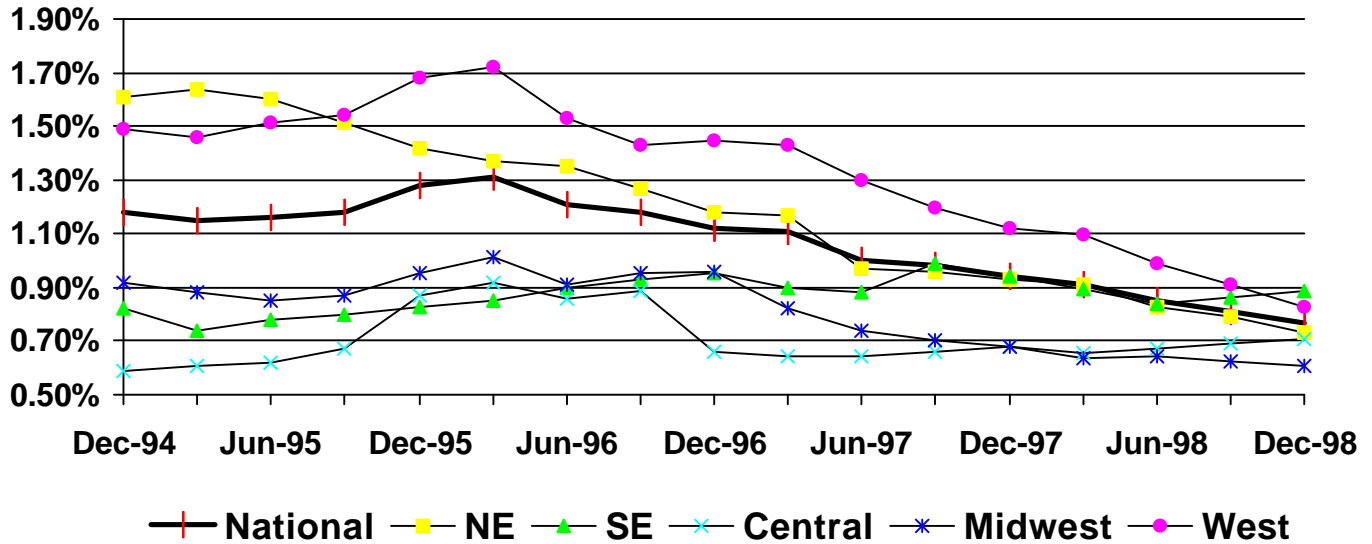
**As of December 31, 1998**

## Regional and State Analysis

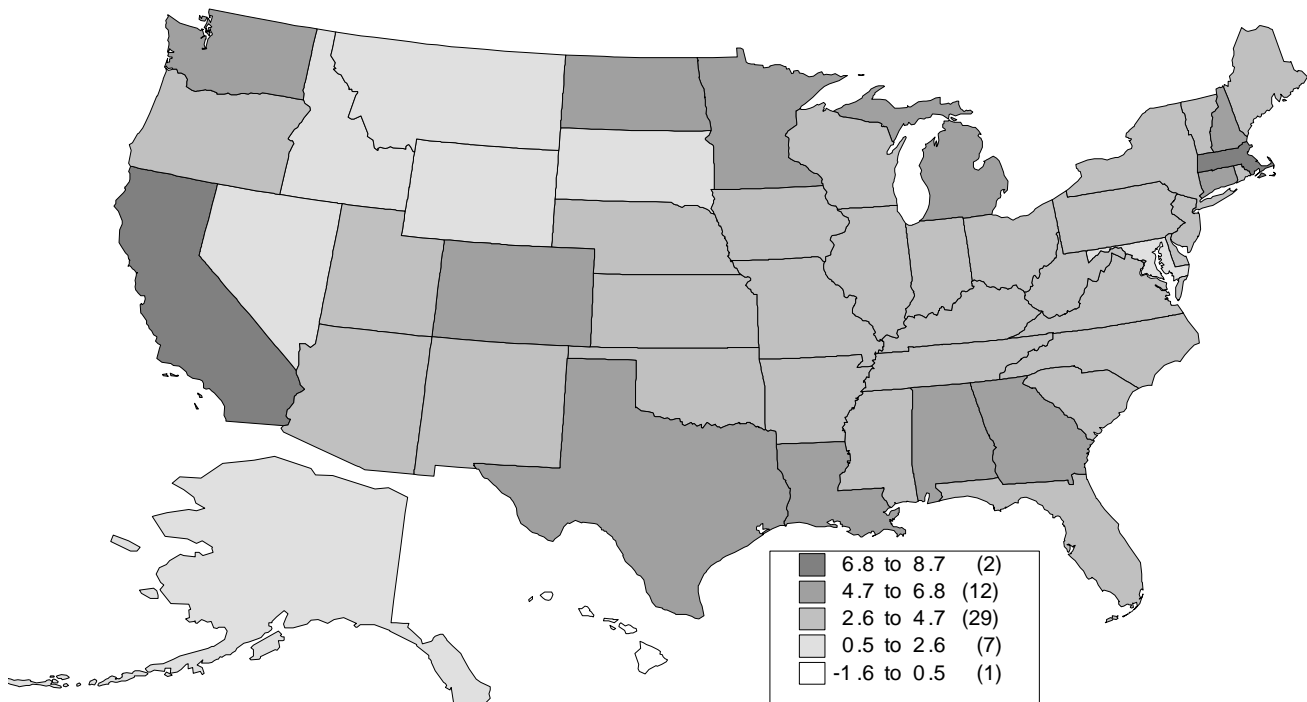
Seriously Delinquent & Home Price Appreciation Rates as of 12/31/98  
(Based on \$)

	MIC SD		TFR SD	Home Price Appreciation	
	Market	Depositories	TFR	1-Year	5-Year
<b>National</b>	<b>0.86</b>	<b>1.20</b>	<b>0.77</b>	<b>4.7</b>	<b>19.9</b>
<b>Northeast</b>	<b>1.11</b>	<b>1.61</b>	<b>0.73</b>		
Connecticut	0.88	1.26	0.41	5.28	6.06
Delaware	0.90	1.57	0.50	2.71	6.73
Maine	0.71	1.28	0.78	4.48	11.74
Massachusetts	0.50	0.66	0.46	6.87	21.16
New Hampshire	0.41	0.63	0.47	6.20	15.71
New Jersey	1.46	2.25	1.06	3.38	8.73
New York	1.46	1.82	0.65	4.55	8.05
Pennsylvania	1.07	1.77	0.85	3.73	9.76
Rhode Island	0.69	0.92	1.52	3.65	4.71
Vermont	0.40	0.77	0.81	2.81	6.92
West Virginia	0.58	1.80	1.13	3.81	24.22
<b>Southeast</b>	<b>1.06</b>	<b>1.54</b>	<b>0.89</b>		
Alabama	0.71	1.58	1.11	4.93	24.30
DC	1.59	1.97	2.53	6.29	6.18
Florida	1.23	1.51	0.62	4.35	16.33
Georgia	0.87	1.40	0.75	5.73	26.49
Maryland	1.76	2.55	2.69	2.26	6.93
North Carolina	0.62	1.04	0.44	3.47	27.25
Puerto Rico	0.94	4.43			
South Carolina	0.70	1.20	0.50	4.00	23.83
Virginia	0.79	1.15	0.52	2.78	10.45
<b>Central</b>	<b>0.64</b>	<b>1.31</b>	<b>0.71</b>		
Illinois	0.90	1.40	0.79	2.63	19.39
Indiana	0.72	1.48	0.92	3.13	26.08
Kentucky	0.48	1.03	0.97	4.27	28.18
Michigan	0.25	0.56	0.75	5.07	40.03
Ohio	0.67	1.38	0.63	4.08	26.79
Tennessee	1.01	2.06	0.67	4.40	30.19
Wisconsin	0.30	0.71	0.26	2.71	30.54
<b>Midwest</b>	<b>0.58</b>	<b>0.98</b>	<b>0.61</b>		
Arkansas	0.97	1.72	0.65	3.04	22.58
Colorado	0.34	0.53	0.11	5.22	41.68
Iowa	0.25	0.32	0.39	3.77	27.73
Kansas	0.45	0.76	0.28	3.89	29.27
Louisiana	0.99	1.71	0.35	4.89	28.53
Minnesota	0.34	0.51	0.29	5.00	28.59
Mississippi	0.78	2.33	1.08	3.93	25.79
Missouri	0.47	0.84	0.46	3.38	23.93
Nebraska	0.22	0.31	0.70	4.42	31.33
New Mexico	0.78	1.18	0.37	2.91	25.99
North Dakota	0.38	0.53	0.94	4.77	24.44
Oklahoma	0.76	1.26	0.29	4.03	21.03
South Dakota	0.44	0.70	0.46	1.50	24.95
Texas	0.79	1.23	0.84	4.87	14.89
<b>West</b>	<b>0.85</b>	<b>0.92</b>	<b>0.83</b>		
Alaska	0.48	1.19	0.00	2.22	19.48
Arizona	0.60	0.76	0.72	4.13	28.68
California	0.91	0.97	0.92	8.66	9.62
Hawaii	1.82	2.63	1.69	-1.53	-11.52
Idaho	0.67	0.81	0.30	1.93	23.32
Montana	0.64	1.19	0.49	1.76	30.83
Nevada	1.23	1.41		2.04	14.08
Oregon	0.35	0.35	0.24	3.69	44.20
Utah	0.69	0.99	1.34	3.38	54.34
Washington	0.56	0.54	0.24	6.05	25.46
Wyoming	0.41	0.60	0.41	1.38	29.36

**OTS Regions**  
**Seriously Delinquent Mortgages (%)**  
 Based on Thrift TFR Data by Location of Headquarters

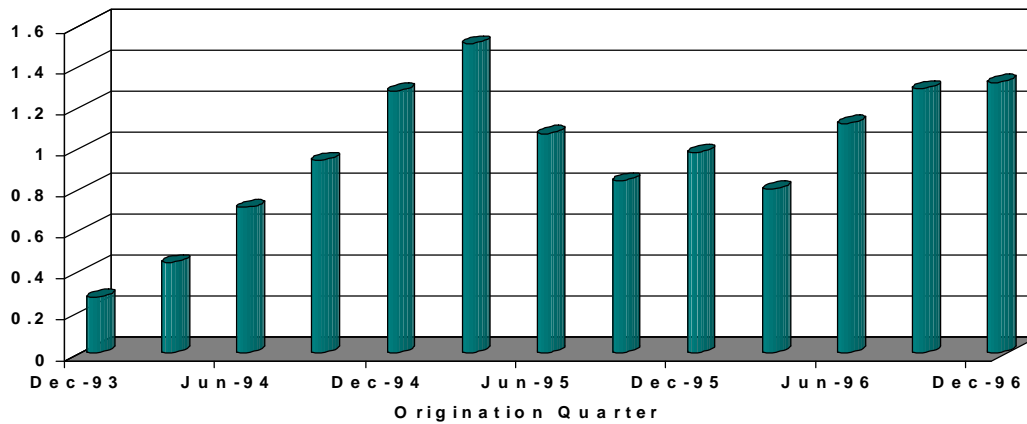


**Percent Home Price Appreciation**  
**1997Q4 to 1998Q4**  
 (Source: OFHEO Resale Database)



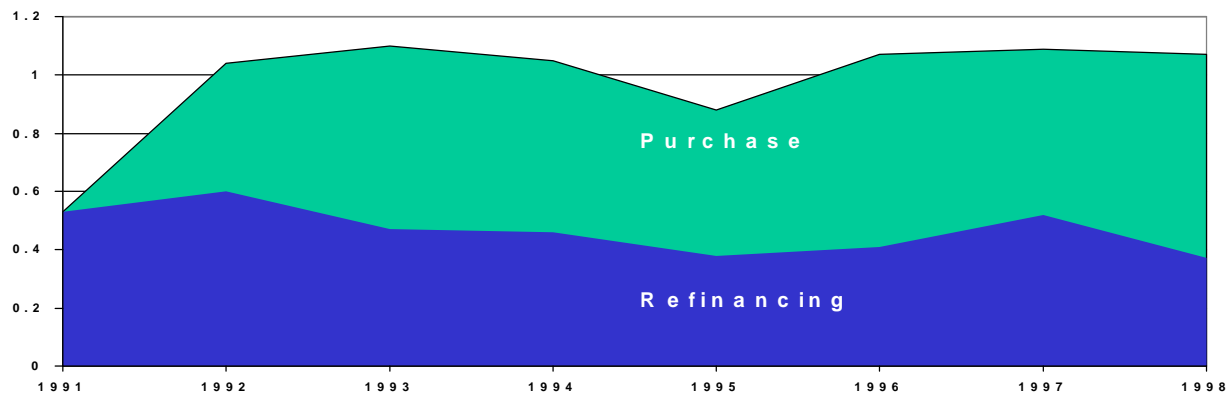
### National Cohort Performance by Quarter of Origination

(Source: MIC, Percent Seriously Delinquent after 24 Months, All Loans)



### Home Purchase vs. Refinancing Mortgages

(Source: MIC, Percent Seriously Delinquent, All Loans)



### Fixed Vs. Variable Rate Mortgages

(Source: MIC, Percent Seriously Delinquent, All Loans)

